CLAIMS

What is claimed is:

1. A filter comprising a filter element mounted to a base, said filter element comprising first and second end caps spaced axially along an axis, said second end cap having an axial flow opening therethrough, filter media extending axially between said end caps and extending in a closed-loop around a perimeter defining a hollow interior communicating with said axial flow opening, wherein fluid to be filtered flows laterally through said filter media and axially through said hollow interior and said axial flow opening, said filter element being mounted to said base by said second end cap.

2. The filter according to claim 1 wherein said filter element is mounted to said base by said second end cap independently of said first end cap.

3. The filter according to claim 2 wherein said filter element is mounted to said base solely by said second end cap.

4. The filter according to claim 1 comprising a retainer co-acting between said second end cap and said base and applying axial retention force therebetween.

5. The filter according to claim 4 wherein said retainer applies said axial retention force independently of said first end cap.

6. The filter according to claim 5 wherein said retainer applies said axial retention force independently of any cover forming a housing with said base and around said filter element.

7. The filter according to claim 4 comprising a resiliently

compressible axial sealing gasket between said second end cap and said base and applying an axial bias opposing said axial retention force.

8. A filter comprising a filter element mounted to a base, said filter element comprising first and second end caps spaced axially along an axis, said second end cap having an axial flow opening therethrough, filter media extending axially between said end caps and defining a closed-loop around a perimeter defining a hollow interior communicating with said axial flow opening, wherein fluid to be filtered flows laterally through said filter media and axially through said hollow interior and said axial flow opening, said second end cap extending laterally outwardly to an outer flange laterally outward of said filter media, a retainer on said outer flange for mounting said filter element at said second end cap to said base.

9. The filter according to claim 8 wherein said filter media has a first outer border, said outer flange has a second outer border laterally outward of said first outer border and sufficiently laterally extended therefrom to accommodate said retainer along the lateral dimension between said first and second outer borders.

10. The filter according to claim 8 wherein said retainer mounts said second end cap to said base in snap-fit relation.

11. The filter according to claim 10 wherein said retainer mounts said second end cap to said base with rectilinear unidirectional axial insertion.

12. The filter according to claim 10 wherein said retainer comprises a hook on one of said second end cap and said base, and a catch on the other of said second end cap and said base.

13. The filter according to claim 12 wherein said hook is on a shank

which extends axially from a hinge on said one of said second end cap and said base, and wherein said hook is laterally movable about said hinge toward and away from said other of said second end cap and said base into and out of engagement with said catch.

14. The filter according to claim 13 wherein said hook has first and second oppositely axially facing surfaces, said catch has third and fourth oppositely axially facing surfaces, wherein said second end cap is mounted to said base with axial insertion motion wherein said second and third surfaces are camming surfaces and engage in camming relation to cam said hook laterally in a first lateral direction until said first surface moves axially past said fourth surface whereupon said hook snaps back laterally in a second lateral direction opposite to said first lateral direction such that said first surface axially aligns with and axially engages said fourth surface and prevents axial separation of said second end cap and said base.

15. The filter according to claim 14 wherein said first surface faces axially toward said hinge, and said second surface faces axially away from said hinge.

16. The filter according to claim 14 wherein said first surface faces axially away from said hinge, and said second surface faces axially toward said hinge.

17. The filter according to claim 14 wherein said hook is manually laterally movable in said first lateral direction about said hinge to move said first surface out of axial alignment with and out of axial engagement with said fourth surface to release said hook from said catch and permit axial separation of said second end cap and said base.

18. The filter according to claim 17 wherein said retainer comprises first and second legs meeting at said hinge and extending oppositely axially

therefrom, said second leg providing said shank and extending from said hinge axially to said hook, said first and second legs comprising a teeter-totter having a fulcrum at said hinge such that manual engagement of and lateral movement of said first leg in said second lateral direction moves said second leg in said first lateral direction by pivoting about said fulcrum, to release said hook from said catch and permit axial separation of said second end cap and said base.

19. The filter according to claim 18 wherein said first leg extends from said hinge axially toward said first end cap and is spaced laterally outwardly of said filter media by a lateral gap therebetween.

20. The filter according to claim 19 wherein said second lateral direction of movement of said first leg is laterally inwardly toward said filter media.

21. The filter media according to claim 17 wherein said retainer comprises an arm extending axially from said hinge to a tab, wherein said hook is axially between said hinge and said tab and extends laterally from said arm, said arm having a first segment extending between said hook and said tab, and a second segment extending between said hook and said hinge and providing said shank, such that manual engagement of said arm at said tab and lateral movement of said arm in said first lateral direction releases said hook from said catch and permits axial separation of said second end cap and said base.

22. The filter according to claim 21 wherein said first segment of said arm extends from said hook axially toward said first end cap and is spaced laterally outwardly of said filter media by a lateral gap therebetween.

23. The filter according to claim 22 wherein said first lateral direction of movement of said first segment of said arm is laterally inwardly toward

said filter media.

24. The filter according to claim 14 wherein said third surface faces axially toward said hinge, and said fourth surface faces axially away from said hinge.

25. The filter according to claim 14 wherein said third surface faces axially toward said first end cap, and said fourth surfaces faces axially away from said first end cap.

26. The filter according to claim 14 wherein said third surface faces axially away from said first end cap, and said fourth surface faces axially toward said first end cap.

27. The filter according to claim 12 wherein said hook is on a shank which extends axially from a hinge on said second end cap, and wherein said hook is laterally moveable about said hinge toward and away from said filter media into and out of engagement with said catch.

28. The filter according to claim 27 wherein said hook moves laterally about said hinge toward said filter media and out of engagement with said catch, and wherein said hook moves laterally about said hinge away from said filter media and into engagement with said catch.

29. The filter according to claim 13 wherein said one of said second end cap and said base is plastic, and said hinge is a spring lever.

30. The filter according to claim 8 wherein said filter element is axially inserted onto said base in a first axial direction, said retainer mounts said second end cap to said base in snap-fit relation upon said axial insertion of said filter

element onto said base, said retainer releasably applies axial retention force between said second end cap and said base and prevents axial separation of said second end cap from said base in a second axial direction, said second axial direction being opposite to said first axial direction, and comprising a resiliently compressible axial sealing gasket between said second end cap and said base and applying axial bias in said second axial direction.

31. The filter according to claim 8 wherein said first end cap is a closed end cap.

32. The filter according to claim 8 wherein said filter is an air filter.